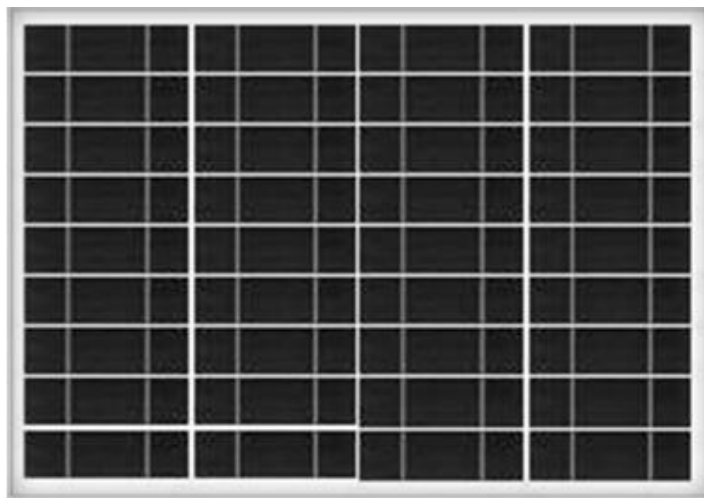


Polycrystalline Modules

USL provides cost-effective photovoltaic power for general use, operating DC directly or, in an inverter-equipped system, AC loads. The 36 cells in series provides 45Watts of maximum power, it is used primarily in utility grid-supplemental systems, telecommunications, remote villages and clinics, pumping and load-based aids to navigation.



Proven Materials and Construction

USL experience shows in every aspect of this module's construction and materials

- Anodized aluminum frame offers required strength and allows for quick and easy installation on standard array structures.
- 36/72 Crystalline silicon solar cells in series.
- Modules are laminated in toughened low iron content PV grade glass – Ethyl Vinyl Acetate films – PV module back sheet.
- Optimized lamination process parameters ensure a stable laminate. Junction Box with IP65 class protection are standard in all modules.
- Each module is flash tested in a Sun simulator to ensure conformity to specification.

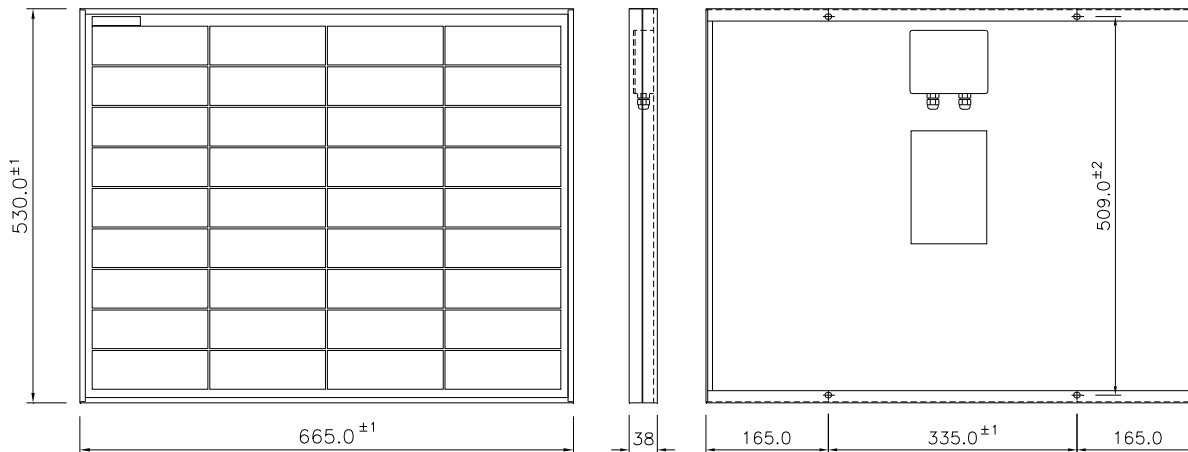
Electrical and Mechanical Data

Model	KL045
Maximum power (Pmax)	45 Wp
Open Circuit Voltage (Voc)	21.5 V
Maximum power point voltage (Vmpp)	17.1 V
Short circuit current (Isc)	2.89 A
Maximum power point current (Impp)	2.63 A
Tolerance of Pmax	±10%
Cell Size (mm)	52 x 156 / 24 x156
No. of cells	36 / 72
Dimensions (mm) ± 1 - 4 X 9 Matrix	665 x 530 x 38
Maximum system voltage	1000
Module Efficiency	12.77%
Weight (kgs)	4.2

Standard Test Condition: Irradiance 1,000 W/sq.m, Temperature 25deg C Air mass 1.5 spectrum)

Performance of Thermal Characteristics

Temperature co-efficient	NOCT (°C)45
Power [Pmax]	-0.43 %/K
Open-circuit voltage [Voc]	-0.36 %/K
Short circuit current (Isc)	+0.06 %/K



All dimensions are in mm

Qualification and certificates

The Photovoltaic Modules certified to
IEC61215 & EN IEC 61730 Class A, Safety Class II